ABSTRACT OF THE DISCLOSURE

A numerical procedure for simulating the behavior of incompressible, viscous fluid in a casting/molding process. The method is based on classical fluid dynamic equations and uses control volume-finite element and numerical techniques to solve the momentum and energy equations to obtain solution for the variable parameters. The method incorporates five additional modules which simulate fluid flow in the shot sleeve, heat transfer between the die and the heat transfer fluid, die cooling by lubricant, formation of mend line. These additional simulation modules produce realistic boundary conditions, and replace many of the assumptions that would have to be made, to solve the governing equations. These added improvements ensure a faster convergence of the numerical solution and a more realistic simulation of the die casting process.